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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,967	10/24/2001	Avi J. Ashkenazi	GNE.2630P1C72	5881

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EXAMINER	
ANGELL, JON E	
ART UNIT	**PAPER NUMBER**
1635	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/002,967	ASHKENAZI ET AL.	
	Examiner	Art Unit	
	Jon Eric Angell	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/24/01, 3/25/02, 9/3/02*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *58-77* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *58-77* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/03 and 3/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The preliminary amendments filed 10/24/2001, 03/25/2002 and 09/3/2002 are acknowledged. The amendments have been entered. The specification has been amended as indicated. Claims 1-57 have been cancelled. Claims 58-77 are currently pending in the application and are addressed herein.

Title and Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. For example, see page 124, line 37 and page 127, line 18. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Applicant is required to delete ALL embedded hyperlinks and/or other forms of browser-executable code. See MPEP § 608.01.

The disclosure is objected to because of the following informalities: the address disclosed for ATCC (e.g., see page 374, lines 34-35) is incorrect, ATCC is now located in Manassas, VA. Additionally, the status of the prior US application(s) in the first paragraph of the specification should be updated (e.g., see preliminary amendment filed 9/3/2002).

Appropriate correction is required.

Biological Deposits

A statement in the specification indicating that the biological deposit ATCC 209616 has been deposited under the provisions of the Budapest Treaty can be found in the specification (see under "Deposit of Material" on page 372 through page 375 of the specification. The statement indicates that under the provisions of the Budapest Treaty, a viable culture of the deposit will be maintained for 30 years form the date of deposit, and that the deposit will be made available by ATCC under the terms of the Budapest Treaty, and subject to an agreement between Genentech, Inc. and ATCC, which assures permanent and unrestricted availability of the progeny of the culture of the deposit to the public upon issuance of the pertinent U.S. patent or upon laying open to the public of any U.S. or foreign patent application, whichever comes first, and assures availability of the progeny to one determined by the U.S. Commissioner of Patents and Trademarks to be entitled thereto according to 35 USC 122 and the Commissioner's rules pursuant thereto (including 37 CFR 1.14 with particular reference to 886 OG 638).

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 3/25/2002 and 6/9/2003 are acknowledged. With respect to the IDS submitted 6/9/2003, the submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. With respect to the IDS submitted 3/25/2002, the database search results have not been considered because the information on the referred databases is incomplete. In order for the databases referred to be considered, Applicants are required to provide complete information, including such database name, accession number, and publication date.

Specific and Substantial Asserted Utility

It is noted that the instant claims are drawn to nucleic acid sequences encoding the PRO363 polypeptide (as well as variants/fragments, etc.). The specification discloses that the PRO363 polypeptide was tested in a number of different assays and was found to test positive in, among others, Assay 10: chondrocyte re-differentiation assay (e.g., see Example 126, page 351). The specification asserts using the PRO363 in the treatment of bone or cartilage disorders such as arthritic conditions and sports injuries (e.g., see p. 351, lines 19-21). It is well recognized that human articular chondrocytes can be isolated, grown in culture and then injected into an injured area of bone or cartilage for treatment. A common problem with culturing the chondrocytes is that they tend to differentiate into fibroblastic type cells rendering them useless for treatment. Compounds that have the "redifferentiation" activity in this assay prevent the cultured chondrocytes from differentiating into the non-usable fibroblasts. As such, the claimed nucleic acid sequences are deemed to have a specific and substantial utility.

Priority

According to the priority statement of 09/03/2002, the claimed subject matter defined in the instant application is supported by parent application serial nos. 09/918585, PCT/US00/04341, 09/380138, PCT/US99/05028, and 60/078910. Based on the information given by applicant and an inspection of the patent applications, the examiner has concluded that the subject matter defined in this application is supported by the disclosure in application serial no. PCT/US00/04341, filed 18 February 2000, but is not supported by any of the earlier

applications because no utility for the claimed polynucleotide, PRO363, is disclosed in the earlier applications. The results of the chondrocyte redifferentiation assay are first reported in PCT/US00/04341. Under 35 U.S.C. 120, a claim in a U.S. application is entitled to the benefit of the filing date of an earlier filed U.S. application if the subject matter of the claim is disclosed in the manner provided by 35 U.S.C. 112, first paragraph, in the earlier filed application. See MPEP 201.11. Since the applications prior to PCT/US00/04341 do not disclose a specific and substantial utility for the PRO363 polynucleotide, they are not enabling.

Accordingly, the subject matter defined in claims 58-77 has an effective filing date of February 18, 2000.

Should the Applicant disagree with the examiner's factual determination above, it is incumbent upon the applicant to provide the serial number and specific page numbers of any parent application filed prior to February 18, 2000 that specifically supports the particular claim limitations for all the pending claims which applicant considers to have been in possession of and fully enabled prior to February 18, 2000.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 71-73 are indefinite in view the recitation of "nucleic acid that hybridizes" or "wherein said hybridization occurs under stringent conditions" (see claims 71 and 72) for the following reasons. First, it is unclear which polynucleotide is claimed absent a statement of the conditions under which the hybridization reaction is performed. Nucleic acids which will

hybridize under some hybridization conditions will not necessarily hybridize under different conditions. Furthermore, the specification discloses several conditions as "stringent conditions", (e.g., highly stringent and moderately stringent) and only examples of these conditions are presented (e.g., see pp. 129-130). Thus, one of skill in the art would not know what conditions, and thus what molecules, Applicant intended the claims to encompass. It is suggested that Applicant's intended experimental hybridization/wash conditions be recited in the claims to clearly indicate which nucleic acids are being claimed. For examination purposes, it will be stringent conditions will be interpreted as encompassing any hybridization conditions.

Correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 58-62 and 74-77 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to isolated nucleic acids encoding polypeptides wherein the nucleic acids have at least 80%, 85%, 90%, 95% or 99% sequence identity with a nucleic acid encoding particular disclosed sequence (SEQ ID NO: 59). The claims do not require that the nucleic acids

possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of molecules that is defined only by sequence identity.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of compete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. There is not even an identification of any particular portion of the structure that must be conserved. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of molecules, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required.

See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

Therefore, only isolated nucleic acids encoding the amino acid sequence set forth in SEQ ID NO: 59 meet the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Claims 58-62 and 74-77 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an isolated polynucleotide encoding the polypeptide of SEQ ID NO: 59 and an isolated cell comprising said polynucleotide, does not reasonably provide enablement for a polynucleotide encoding a polypeptide not identical to SEQ ID NO: 59 or a non-isolated cell comprising the polynucleotide. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988).

> *Wands* states on page 1404,
> "Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in Ex parte Forman. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

Claims 58-62 are directed to a genus of polynucleotides encoding polypeptides at least 80%, 85%, 90%, 95% or 99% sequence identity to a polynucleotide encoding the polypeptide of SEQ ID NO: 59, wherein the polypeptides can have any function or no function at all. Claims 74-77 are directed to vectors and host cells comprising the genus of polynucleotides of claim 58.

The specification discloses the structure of the polynucleotide of SEQ ID NO: 58 (which encodes the polypeptide of SEQ ID NO: 59) and discloses a function for the polypeptide encoded by the polynucleotide of SEQ ID NO: 58 as capable of causing chondrocyte redifferentiation. The genus of polynucleotides encompassed by the claims is a large variable genus comprising many structurally different polynucleotides wherein each polynucleotide has the potentiality of encoding a protein that is structurally and functionally different from the others.

As taught by the art, a high degree of structural homology may not result in functional homology. **Witkowski** et al. (Biochemistry 38:11643-11650, 1999) teaches that one amino acid substitution transforms a β-ketoacyl synthase into a malonyl decarboxylase and completely eliminates β-ketoacyl synthase activity. **Seffernick** et al. (J. Bacteriol. 183(8):2405-2410, 2001) teaches that two naturally occurring Pseudomonas enzymes having 98% amino acid sequence identity catalyze two different reactions: deamination and dehalogenation, therefore having different function. Therefore, the claimed genera of polynucleotides have the potentiality of encoding proteins of many different functions.

In addition, while a sufficient written description of a genus of DNAs may be achieved by a recitation of a representative number of DNAs defined by nucleotide sequence or a recitation of structural features common to members of the genus, which features constitute a

substantial portion of the genus, in the instant case, the recited structural features as interpreted, such as "any fragment of the polypeptide of SEQ ID NO: 59" or "any fragment of the polypeptide of SEQ ID NO: 59 lacking its signal sequence", do not constitute a substantial portion of the genus as the remainder of any nucleic acid comprising said structural elements is completely undefined and the specification does not define the remaining structural features for members of the genus to be selected. Many functionally and structurally unrelated polynucleotides are encompassed by these claims. The specification only discloses a single species of the claimed genera which is insufficient to put one of ordinary skill in the art in possession of all attributes and features of all species within the claimed genera. Therefore, one skilled in the art cannot reasonably conclude that the applicant had possession of the claimed invention at the time the instant application was filed.

Additionally, a claim 76 is drawn to "a host cell" comprising an isolated nucleic acid. It is noted that the claim is not limited to "an isolated host cell". As such, and in view of the disclosure that the polynucleotide can be used to make transgenic animals, (e.g., see the paragraph bridging pages 192-193), the instant claim encompasses a host cell comprising the nucleic acid wherein the host cell is a non-isolated cell, such as a cell in a transgenic animal.

The claims encompass "a host cell" comprising the particular nucleic acid sequences, wherein the cells can be non-isolated cells (i.e., cells within an animal). As indicated above, the specification also contemplates transgenic animals that have been genetically engineered such that the transgenic animals comprise the claimed nucleic acids or cells. Therefore, given the broadest reasonable interpretation, the claims encompass transgenic animals which have been genetically engineered to comprise the claimed sequences and cells.

With respect to making transgenic animals, it is noted that the prior art recognizes that making such genetically modified animals is unpredictable. For instance, the relevant art has for many years stated that the unpredictability of making transgenic animals lies with the site or sites of integration of the transgene into the target genome. Transgenic animals are regarded to have within their cells mechanisms which prevent expression of the transgene, such as DNA methylation or deletion from the genome (**Kappell et al.** (1992) Current Opinion in Biotechnology, Vol. 3, p. 549, col. 2, parag. 2). Furthermore, **Mullins et al.** states that not all animals express a transgene sufficiently expresses the transgene as the integration of a transgene into difference species of animal has been reported to given divergent phenotypes (**Mullins et al.** (1993) Hypertension Vol. 22, page 631, col. 1, parag. 1, lines 14-17). Also, **Mullins et al.** (1996) teaches that "the use of nonmurine species for transgenesis will continue to reflect the suitability of a particular species for the specific questions being addressed, bearing in mind that a given construct may react very differently from one species to another." (**Mullins et al.** (1996) J. Clin. Invest. Vol. 97, page 1559, Summary). Furthermore, well-regulated expression of the transgene is not frequently achieved because of poor levels or the complete absence of expression or leaky expression in non-target tissues (**Cameron** (1997) Molec. Biol. Vol. 7, page 256, col. 1 -2, bridg. parag.). Factors influencing low expression, or the lack thereof, are not affected by copy number and such effects are seen in lines of transgenic mice made with the same construct (**Cameron** (1997), page 256, lines 3-9). These factors, thus, are copy number independent and integration site dependent, emphasizing the role the integration site plays on expression of the transgene (**Cameron** (1997), page 256, lines 10-13).

While, the intent is not to say that genetically modified animals can never be made, the

intent is to provide art taught reasoning as to why the instant claims are not enabled to their full scope. Given such species differences in the expression of a transgene, particularly when taken with the lack of guidance in the specification, it would have required undue experimentation to predict the results achieved in any engineered mammal comprising the claimed cell(s).

Considering the nature of the invention, the breadth of the claims, the unpredictable nature of the invention as recognized in the prior art, the limited amount of working examples and guidance provided, and the high degree of skill required to practice the invention, it is concluded that the specification does not provide an enabling disclosure for the full scope of the instant claims. Therefore, additional experimentation is required before one of skill in the art could make and use the claimed invention to the full scope encompassed by the claims. The amount of additional experimentation required to perform the broadly claimed invention is undue.

The following rejection under 35 U.S.C. § 102 is made under the assumption that the effective filing date for the instantly claimed invention is February 18, 2000, as indicated above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 58-64, 66 and 68-77 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2002/0055139 A1 (HOLTZMAN et al., published May 9, 2002 with priority to at least May 14, 1999).

HOLTZMAN teaches an isolated nucleic acid that encodes a polypeptide (human A236 protein) that is 100% identical to SEQ ID NO: 59 (See attached sequence alignment), (e.g., see HOLTZMAN paragraph [0129] describing Figure 23, SEQ ID NO: 23 and SEQ ID NO: 24). Since the nucleic acid taught by HOLTZMAN encodes a polypeptide that is 100% identical to SEQ ID NO: 59, the nucleic acid sequence taught by HOLTZMAN would necessarily encode the extracellular domain of SEQ ID NO: 59. Furthermore, the nucleic acid taught by HOLTZMAN would necessarily hybridize to a nucleic acid sequence encoding SEQ ID NO: 59 under stringent conditions. HOLTZMAN also teaches that the nucleic acid encoding human A236 can be inserted into an expression vector and the expression vector can be placed in a host cell such that the polypeptide is produced in the cell (e.g., see the abstract; paragraphs [0081], [0318] and [0638]). HOLTZMAN specifically teaches that the host cell can be a yeast cell, an E. coli cell or a mammalian cell (see paragraphs [0641], [0644], and [0650]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 63, 65 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0055139 A1 (HOLTZMAN et al., published May 9, 2002 with priority to at least May 14, 1999).

It is noted that HOLTZMAN et al. is a reference that is over 5500 pages long. Since the reference is over 5500 pages long, the reference is not being mailed to applicants (per SPE Andrew Wang). However, specific pages containing information that is pertinent to the instant rejection are attached. Should Applicants require the entire document, they are asked to call the Examiner and the entire HOLTZMAN et al. document will be mailed to Applicants.

HOLTZMAN teaches an isolated nucleic acid that encodes a polypeptide (human A236 protein) that is 100% identical to SEQ ID NO: 59, as indicated above (e.g., see HOLTZMAN paragraph [0129] describing Figure 23, SEQ ID NO: 23 and SEQ ID NO: 24).

HOLTZMAN does not teach that the isolated nucleic acid comprises a sequence encoding the polypeptide of SEQ ID NO: 59 lacking its associated signal peptide or an isolated

nucleic acid comprises a sequence encoding the extracellular domain of polypeptide of SEQ ID NO: 59 lacking its associated signal peptide.

However, HOLTZMAN does teach the structural domains of human A236 protein, including the signal peptide, extracellular domain, transmembrane domain and cytoplasmic domain as well as the cleavage product that is the mature form of the A236 protein (i.e., amino acids 19-373) (e.g., see paragraphs [0302] and [0601]). HOLTZMAN also teaches that antibodies can be produced that specifically bind to each domain of the polypeptide (see paragraph [0632].

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to create make a nucleic acid that comprises a sequence encoding the mature form of the A236 protein (which is also the polypeptide of SEQ ID NO: 59 lacking its signal peptide) as well as a nucleic acid that comprises a sequence encoding the extracellular domain of A236 lacking its associated signal peptide with a reasonable expectation of success.

One of ordinary skill in the art would have been motivated to make the nucleic acid sequence encoding the mature form of the A236 and the nucleic acid sequence encoding the extracellular domain of A236 protein lacking its associated signal peptide in order to produce the mature form of the protein or to produce polypeptides which could then be used to make antibodies specific for non-signal peptide domains of A236. It is noted that making a vector that expresses a protein of interest and making antibodies are conventional and routine, as such the nucleic acids could have been made with a reasonable expectation of success.

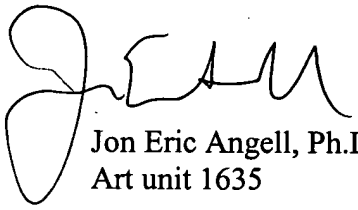
Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Eric Angell whose telephone number is 571-272-0756. The examiner can normally be reached on Mon-Fri, with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John LeGuyader can be reached on 571-272-0760. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jon Eric Angell, Ph.D.
Art unit 1635